



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 4000  
Alexandria, Virginia 22313-1400  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,496	05/07/2001	Chaiya Chandavasu	715-1-100	3184

23565 7590 01/06/2004

KLAUBER & JACKSON  
411 HACKENSACK AVENUE  
HACKENSACK, NJ 07601

EXAMINER
----------

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
----------	--------------

1723

DATE MAILED: 01/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No

09/851,496

Applicant(s)

CHANDAVASU ET AL.

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-848) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 13-48 are pending.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas et al (US 6,444,302 B1) in view of Bierenbaum et al (US 3,426,754).

Srinivas (302) teaches a method of preparation of a microporous membrane (breathable membrane) comprising domains of a first polymer uniformly distributed in a second polymer (abstract), second polymer comprising three dimensional network of pores (col 2 line 63-col 3 line 37), film composition in the range of having first polymer 1-35% and second polymer >65%, second polymer immiscible with the first, stretching (col 9 line 43-col 10 line 20, col 11 lines 14-32) as in instant claim 13.

Srinivas does not specifically teach the porosity as 5-40% and pore dia as 1-200 nm. Bierenbaum teaches a breathable film to have 10-50% porosity and pore dia 10-500 nm (col 2 lines 24-41). It would be obvious to one of ordinary skill in the art at the time of invention to infer from the teaching of Bierenbaum that the porosity and the pore dia of the breathable membrane of Srinivas could also be made in the same range as that of Bierenbaum for use as a breathable membrane.

Claim 16 adds the further limitation of extrusion (see col 10 lines 24-30)

2. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (302) in view of Bierenbaum et al (754) as applied to claim 13 above, and further in view of Perez et al (US 6,331,343 B1).

Srinivas (302) in view of Bierenbaum et al (754) does not teach casting the membrane. Perez teaches casting the membrane which is formed from a mixture of two immiscible polymers (col 7 lines 49-67). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Perez in the teaching of Srinivas (302) in view of Bierenbaum et al (754) for obtaining very thin films as taught by Perez.

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (302) in view of Bierenbaum et al (754) as applied to claim 13 above, and further in view of JP 58-020273.

Srinivas (302) in view of Bierenbaum et al (754) does not teach spray application for making the membrane. JP'273 teaches electrostatic spray application of the composition on a substrate. (4-fig). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of JP'273 in the teaching of Srinivas (302) in view of Bierenbaum et al (754) to make the membrane to avoid using solvents.

4. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (302) in view of Bierenbaum et al (754) as applied to claim 13 above, and further in view of Fisher et al (US 5,013,439).

Srinivas (302) in view of Bierenbaum et al (754) teach cold stretch or hot stretch (by the temperature conditions) but not cold stretch before hot stretch as in claim 17-20 and annealing at 5-10 C higher than the hot stretching step as in claim 20. Fisher (439) teaches cold stretching at about 15-25C to about 30% more than the original dimension (col 6 lines 26-40) before hot stretching (col 7 lines 54-65) line and annealing (col 5 lines 42-55) above the hot stretch temperature to make microporous membranes using thermoplastic polymers like polypropylene. It would be obvious to one of ordinary skill in the art at the time of invention to use the teachings of Fisher (439) in the teaching of Srinivas (302) in view of Bierenbaum et al (754) to obtain decreased pore size and increased pore densities as taught by Fisher (439) (abstract).

5. Claims 21-23 and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (302) in view of Bierenbaum et al (754) as applied to claim 13 and 16-20 above and further in view of Shibata et al (US 6,217,687).

Srinivas (302) in view of Bierenbaum et al (754) does not teach the compatibilizing block copolymer as in claims 21-23. Shibata (687) teaches such a compatibilizing co-polymer for improving the stretchability (col 5 lines 8-13) in a thermoplastic microporous membrane formed by polyethylene and having an immiscible minor component like PBT (col 5 lines 58-65). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Shibata (687) in the teaching Srinivas (302) in view of Bierenbaum et al (754) for improving the stretchability of the membrane as taught by Shibata

Claims 26-30 adds further limitations as discussed in claims 16-20 as above.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (302) in view of Bierenbaum et al (754) and Shibata (687) as applied to claim 21 above and further in view of Perez (343).

Srinivas (302) in view of Bierenbaum et al (754) and further in view of Shibata (687) does not teach casting as the process for making the membrane. Perez teaches casting the membrane which is formed from a mixture of two immiscible polymers (col 7 lines 49-67). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Perez in the teaching of Srinivas (302) in view of Bierenbaum et al (754) and Shibata (687) for obtaining very thin films as taught by Perez.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (302) in view of Bierenbaum et al (754) and Shibata (687) as applied to claim 21 above and further in view of JP'273.

Srinivas (302) in view of Bierenbaum et al (754) and Shibata (687) does not teach spray coating on a substrate. JP'273 teaches electrostatic spray application of the composition on a substrate (4-fig). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of JP'273 in the teaching of Srinivas (302) in view of Bierenbaum et al (754) to make the membrane without using solvents.

8. Claims 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas et al (US 6,444,302 B1) in view of Bierenbaum et al (US 3,426,754).

Srinivas (302) teaches a membrane (breathable membrane) comprising domains of a first polymer uniformly distributed in a second polymer (abstract), second polymer comprising three dimensional network of pores (col 2 line 63-col 3 line 37), film composition in the range of having first polymer 1-35% and second polymer >65%, second polymer immiscible with the first, stretching (col 9 line 43-col 10 line 20) as in instant claim 31.

Srinivas does not specifically teach the porosity as 5-40% and pore dia as 1-200 nm. Bierenbaum teaches a breathable film to have 10-50% porosity and pore dia 10-500 nm (col 2 lines 24-41). It would be obvious to one of ordinary skill in the art at the time of invention to infer from the teaching of Bierenbaum that the porosity and the pore dia of the breathable membrane of Srinivas could also be in the same range as that of Bierenbaum for use as a breathable membrane.

Claims 32-38 and the rest of the limitations of claim 31 describe specific process steps in the formation of the membrane. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

9. Claims 39-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (302) in view of Bierenbaum et al (754) as applied to claim 31 above and further in view of Shibata et al (US 6,217,687).

Srinivas (302) in view of Bierenbaum et al (754) does not teach the compatibilizing block copolymer. Shibata (687) teaches such a compatibilizing copolymer for improving the stretchability (col 5 lines 8-13) in a thermoplastic microporous membrane formed by polyethylene and having an immiscible minor component like PBT (col 5 lines 58-65). It would be obvious to one of ordinary skill in the art at the time of invention to use a compatibilizing copolymer in the membrane as taught by Shibata (687) in the membrane as taught Srinivas (302) in view of Bierenbaum et al (754) for improving the stretchability as taught by Shibata.

Re claims 40-48, these claims are product by process. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

### ***Response to Arguments***



Applicant's arguments filed 10/22/03 have been fully considered but they are not persuasive.

Applicant's argument re the Srinivas ref, on the rejection of claims 13 and 16, that it does not provide a three dimensional reticulated network, there is no mention of pores, and does not provide two-component films in which cracks are created without delay: Srinivas teaches the process as claimed, except for the specific teaching of porosity, which is taught by the secondary ref. Since Srinivas has a process similar to the applicant, and produces a breathable film, the porosity should also be similar, as discussed in the rejection. Re developing the cracks with delay, this seems to be new matter not in the specification and also not claimed; there is nothing in the Srinivas ref that indicates that cracks could develop instantly or with delay; and if the applicant can have the cracks develop with delay, so does the reference which uses similar process. See col 9 line 60 – col 10 line 20 for the development of the breathable film in Srinivas, where porosity of the film is discussed as 'separation at the interface' in the 'matrix' of the SPC; and col 1 lines 50-60 for microvoids. Re Srinivas having no use of the compatibilizing polymer, the selected paragraph only teaches "... free or substantially free of compatibilizing polymer ..." as "preferred", which does not mean that there is no compatibilizing polymer. In fact, it could mean that there can be compatibilizing polymer in the non-preferred embodiments. "Substantially free" does not mean "totally free" either. It may be noted that claim 13 and 16 do not recite compatibilizing polymer, nor the two step stretching.

Re the argument that Srinivas does not teach a breathable membrane having three-dimensional structure with compatibilizing produced in two stretching steps, two-step stretching as in claim 17 is taught by the tertiary ref. Re the argument that the secondary ref Bierenbaum teaches only a breathable film produced by cold stretch that is composed of a single blend, it may be noted that this ref was used only to show what the expected porosity would be for a breathable film.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon  
Patent Examiner

  
W. L. WALKER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700